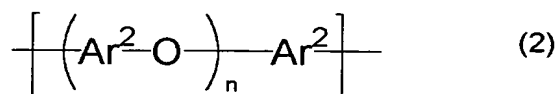
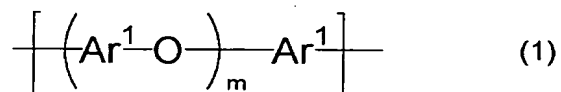


CLAIMS

1. An aromatic-polyether-type ion-conductive ultrahigh molecular weight polymer having an ion exchange capacity of 0.1 meq/g or higher and a structure comprising an aromatic-polyether-type ultrahigh molecular weight polymer in which an acid group introduced, said aromatic-polyether-type ultrahigh molecular weight polymer having at least one structural unit selected from those represented by the following formulas (1) and (2) and the sum of the number a of the structural unit of the formula (1) and the number b of the structural unit of the formula (2) being 2 or larger:



(wherein Ar¹ and Ar² independently represent an aromatic divalent group, m and n represent repeating numbers, m and n independently represent a numeral of 10 or more, and a plurality of Ar¹, a plurality of Ar², a plurality of m and a plurality of n may be different respectively).

2. An aromatic-polyether-type ion-conductive ultrahigh molecular weight polymer according to claim 1, wherein the acid group is sulfonic acid group.

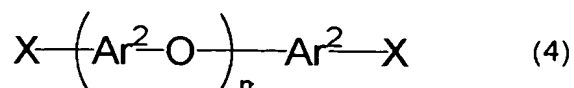
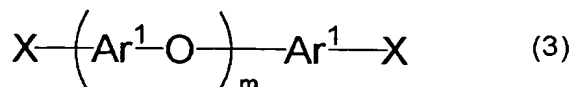
3. A process for producing the aromatic-

polyether-type ion-conductive ultrahigh molecular weight polymer of claim 1 which comprises introducing an acid group into an aromatic-polyether-type ultrahigh molecular weight polymer having at least one structural unit selected from those represented by the formulas (1) and (2) described in claim 1, the sum of the number a of the structural unit of the formula (1) and the number b of the structural unit of the formula (2) being 2 or larger.

4. A process according to claim 3, wherein the acid group is sulfonic acid group.

5. An aromatic-polyether-type ultrahigh molecular weight polymer having at least one structural unit selected from those represented by the formulas (1) and (2) described in claim 1, the sum of the number a of the structural unit of the formula (1) and the number b of the structural unit of the formula (2) being 2 or larger.

6. A process for producing an aromatic-polyether-type ultrahigh molecular weight polymer of claim 5 which comprises polymerizing by a condensation reaction at least one polymer selected from the polymers represented by the following formulas (3) and (4) in the presence of a zerovalent transition metal complex:



(wherein Ar^1 , Ar^2 , m and n are the same as defined above, X represents a group which is eliminated at the condensation reaction, and a plurality of X may be different).

7. A process for producing an aromatic-polyether-type ultrahigh molecular weight polymer according to claim 6, wherein X is chlorine, bromine, iodine, *p*-toluenesulfonyloxy group, methanesulfonyloxy group or trifluoromethanesulfonyloxy group.

8. A polymer electrolyte comprising the aromatic-polyether-type ion-conductive ultrahigh molecular weight polymer of claim 1 as an effective component.

9. A polymer electrolyte membrane comprising the polymer electrolyte of claim 8.

10. A catalyst composition comprising the polymer electrolyte of claim 8.

11. A fuel cell comprising the polymer electrolyte membrane of claim 9 and/or the catalyst composition of claim 10.